

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

ELECTRONIC SCRIPTING PRODUCTS,
INC.,

Plaintiff,

v.

HTC AMERICA INC.,

Defendant.

Case No. [17-cv-05806-RS](#)

**ORDER GRANTING MOTION FOR
SUMMARY JUDGMENT OF NON-
INFRINGEMENT**

I. INTRODUCTION

Plaintiff Electronic Scripting Products, Inc. (“ESPI”) is the owner of United States Patent No. 9,235,934, entitled “Computer Interface Employing a Wearable Article with an Absolute Pose Detection Component.” The accused devices are headsets made by defendant HTC America, Inc. to be used in conjunction with virtual reality systems sold by former co-defendant Valve, which has been voluntarily dismissed.

The “wearable article” described in the patent, and the accused headsets, are both intended to permit a virtual reality system to determine where a human user is and in what direction he or she is looking, so that the user’s movements and actions can be recreated within the virtual world. At the claim construction stage, and continuing into this motion, the parties have offered prosecution history and extensive argument directed at the question of whether the “controller”—the computer circuitry that determines position—must be “onboard” the wearable article. Those arguments are largely misdirected, however, and the prosecution history is of little significance,

1 because at the end of the day the parties *agree* that the determination of position must take place
2 within circuitry onboard the “wearable article.”

3 The dispute, therefore, boils down to a straightforward question: do the accused headsets
4 contain a controller that sufficiently identifies a “derivative pattern indicative of . . . position,” or
5 do they merely facilitate determining position by collecting data and passing it on to a separate
6 computer, which then makes the necessary calculations. HTC has presented evidence that its
7 accused products only do the latter, and ESPI has failed to present admissible evidence sufficient
8 to create a triable issue of fact to the contrary. HTC’s motion must therefore be granted.

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United States District Court
Northern District of California

II. BACKGROUND

The Patent

While the scope of the claims is not limited to the embodiments described in the specification, one of the patent drawings serves to illustrate some of the basic ideas.

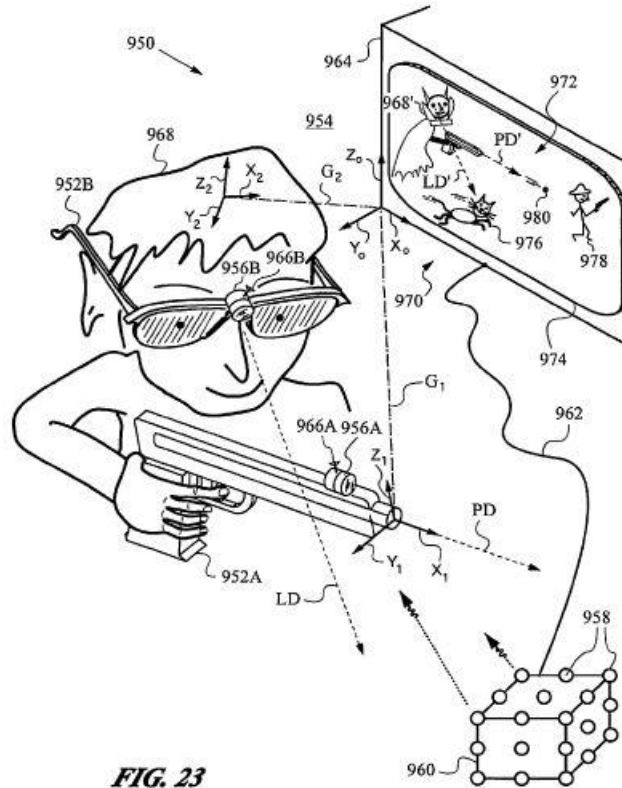


FIG. 23

In this embodiment, the glasses are the “wearable article.” The patent describes a system that allows the position of the user and the direction he or she is looking in to be determined for representation in, for example, a video game or training tool, as depicted on the display in the drawing.

The patent explains that it is “well known that the problem of determining an absolute pose or a motion trajectory of an object in almost any real three dimensional environment may be effectively addressed by the application of optical apparatus and methods.” ’934 Patent at 2:5-9.

Some prior art optical navigation systems used markers, such as light sources, mounted on an object in combination with cameras or other optical sensors fixed in the environment, *id.* at 2:60-3:46, an approach HTC calls “outside-in” tracking. The ’934 patent, in contrast, calls for a photodetector on board the wearable article and external light sources in a known pattern, which HTC calls “inside-out” tracking. In terms that may be over-simplified, the claimed invention permits both the position and the orientation of the photodetector on the wearable article to be calculated based on how the pattern of the light sources appears from the perspective of the photodetector.

Claim 1 of the ’934 patent is the only independent claim asserted in this litigation. HTC seeks summary judgment of non-infringement based on arguments that its accused headsets do not meet the highlighted claim element:

A wearable article cooperating with a first plurality of predetermined light sources disposed in a known pattern, said wearable article comprising:

a) a photodetector configured to detect said first plurality of predetermined light sources and generate photodetector data representative of the positions of said first plurality of predetermined light sources; and

b) a controller configured to identify a derivative pattern of said first plurality of predetermined light sources from said photodetector data, wherein said derivative pattern is indicative of the position of said photodetector.

The Accused Products

As noted above, the accused product are headsets (also known as head-mounted displays, or HMD), made by HTC to be used in its Vive Pro and Vive Pro Eye products in conjunction with virtual reality systems sold by former co-defendant Valve. The accused products require three primary components to determine the position of a user’s headset: (1) base stations, also known as “lighthouses,” which generate fan-shaped directional laser beams that sweep across the tracked

1 volume; (2) the headset itself, which has up to 32 single-point optical sensors located on the
2 surface of the headset, and (3) a host personal computer (PC), which HTC does not sell and which
3 must therefore be separately supplied by the user, to run the “SteamVR” software used to calculate
4 the pose of the headset.

5 The base stations include two rotating wheels set at right angles to each other, each of
6 which includes a mirrored lens mounted on the wheel (“rotor”) that projects a fan-shaped infrared
7 laser beam. In operation, the rotors rotate approximately 60 times per second, which results in
8 each of the beams sweeping across the field of view of the base stations at the same rate. The
9 rotations of the two rotors are offset such that the laser beams alternate between vertical and
10 horizontal sweeps of the play area.

11 The first generation of base stations also contain a series of non-directional infrared LEDs
12 that flash between horizontal and vertical sweeps. The headset itself contains a series of single-
13 point infrared photosensors on the outside of the headset. A photodiode converts incident infrared
14 light into a current, which is then transformed into a voltage (referred to as an “envelope”). The
15 modulation frequency of the beam is filtered out, and the resulting signal is transmitted to a field
16 programmable gate array (FPGA). The FPGA identifies the rising and falling edges of the signals
17 from the sensors, timestamps those signals, and passes the timestamped signals to the MCU (main
18 control unit). The MCU queues timestamped signals from the FPGA and passes them to the host
19 PC in a defined message format via either a USB (universal serial bus) or wireless radio
20 connection. The optical messages passed from the MCU to the host PC identify only the start and
21 stop times, sensor ID, and width of the optical pulses detected by the individual sensors. The
22 optical packets are not retained on the headset once they are sent.

23 The host PC uses reports from multiple sensors after a single laser sweep to calculate or
24 update the position of the headset. This process is performed by the host PC, to take advantage of
25 the superior processing power of the host PC relative to the headset, and because the headset is
26 missing information such as the position of the base stations, which is necessary to find the
27 position of the headset or any given sensor.

1 The second generation of base stations, which may be used by the accused Vive Pro and
2 Vive Pro Eye products, do not include nondirectional LEDs but instead modulate a signal onto the
3 emitted laser beams, using a process called “sync on beam.” The photosensors in the second-
4 generation product headsets output both an “envelope” signal as in the first generation and a
5 “data” signal, which outputs information modulated onto the laser beam.

6 The FPGA time-stamps signals as in the first-generation products, and the MCU matches
7 “envelope” signal events to “data” signal events and forwards both to the host PC. As in the first-
8 generation products, the host PC uses the sensor data forwarded from the headset to calculate and
9 update the position of the headset.

10 HTC asserts no circuitry on the headset of any of the accused products contains any ability
11 to identify any pattern in the signals from the photodiodes, particularly signals received at
12 different times from either different rotors or different base stations. If a photodiode on the headset
13 detects light from one rotor and then subsequently detects light from a different rotor (either on the
14 same base station or a different base station), the circuitry on the headset simply forwards reports
15 of each individual “hit” to the host PC.

16 HTC further asserts that at no time does any circuitry on the headset perform any
17 calculation comparing the raw data from hits on the same sensor at different points in time for any
18 reason. The headset does not calculate the position or pose either of the entire headset or of any
19 individual photosensor. The headset does not receive or calculate the position of the lighthouse or
20 any component of the lighthouse. The headset does not calculate the angle between any sensor and
21 any base station—as mentioned above, the headset does not even have any information about the
22 location of the base station.

ESPI's Infringement Contentions

In their entirety, ESPI's disclosed infringement contentions regarding the claim limitation at issue were:

b) An internal controller (processor) mounted onboard the Vive HMD is a controller configured to process the generated photodetector data received from a particular photodetector on the HMD and identifies a derivative pattern of the relative vertical and horizontal angular positions of the multiple laser apertures located in each Base Station being used.

The derivative pattern identified by the configured controller is indicative of a positional mapping of the laser emitters from the viewpoint of a particular photodetector and is indicative of the vertical and horizontal angular position of the photodetector relative to the Base Station being used.

That is to say, a controller mounted onboard the HMD receives photodetector data, determines the timing of the pulses occurring in the signal from each photodetector, and identifies a timing pattern (derivative pattern) of said pulses. The timing pattern is indicative of, that is a determination of, the position of the photodetector with respect to the Base Station.

The timing pattern, that is a representation of the position, is an output of the onboard controller.

(emphasis in original).

HTC complained that in response to its interrogatory asking ESPI to identify its evidence for those infringement contentions, ESPI disclosed only (1) a series of hyperlinks to third party websites (a journal article, a Wikipedia article, and two third-party YouTube videos that are over 2.5 hours and 3.5 hours long); (2) thirteen numbered documents consisting of either screen captures or printouts of mostly third-party websites, and; (3) claim charts prepared by plaintiff,

which themselves refer to various third-party websites. After ESPI refused to supplement its interrogatory response, the assigned magistrate judge ruled that ESPI is “bound by those responses going forward.”

The central dispute

In prior motion practice, including claim construction proceedings, the parties’ arguments did not always squarely meet. The claim construction order observed:

The ordinary process leading to claims construction motion practice seems to have functioned poorly. Rather than presenting discrete, crystallized, disputes as to competing constructions, the parties appear to be ships passing in the night, each side responding to arguments the other denies advancing The constructions proposed on both sides are problematic. ESPI offers lengthy and sometimes argumentative blocks of text that would not be helpful to a jury, even assuming they fairly capture the claim. HTC, in turn, proposes language that appears designed to forestall arguments plaintiff may not even be making. Wading into the morass, this order will largely adopt ESPI’s alternate contention that the disputed terms require no construction—the “plain language” of the claim will suffice. The order, however, will be without prejudice to further refinement should the parties subsequently arrive at more concrete disagreements about the meaning of the claim terms.

The parties have not arrived at any such more concrete disagreements and continue to be nocturnal passing vessels to some degree. Like the claim construction briefing, the present briefing is largely focused on the issue of the controller (*i.e.*, a computer processor) that the patent requires to be “on board” the “wearable article.” The claim construction order concluded the parties actually *agree* the controller must be “on board,” and declined to provide a more detailed “construction” of most of the terms presented by the parties. The order, however, correctly predicted the core issue:

Much of HTC’s briefing is devoted to arguing that the “controller” must be “onboard” the wearable article. HTC contends ESPI avoided prior art by arguing to the PTO that its invention differs from others in that the computations of the position and orientation are performed by a processor that is included in the “wearable article” rather than by a separate computer processor located elsewhere. The parties debate at length concepts of prosecution history “disclaimers” and related issues.

1 ESPI, however, has made it completely clear that it agrees the controller must be
2 part of the wearable article. Even apart from ESPI's representations to the PTO, the
3 plain language of the claim provides that the wearable article "comprises" the
4 controller—no reasonable argument can be made that a separate processor located
5 elsewhere meets the claim elements.

6 It may be that the parties spend so much energy on this issue because **they have an
7 underlying, and more fundamental dispute regarding exactly what must be
8 calculated by the controller with respect to position or orientation**, but they
9 have not presented constructions for any terms that would resolve that dispute.

10 Indeed, that is exactly the heart of the dispute presented on summary judgment now.
11 HTC's arguments continue to be centered around the points that (1) the controller must be on
12 board, (2) prosecution history shows the claim was allowed because the inventor distinguished
13 prior art by pointing to the onboard solution as novel and advantageous, and (3) HTC's accused
14 product uses an external computer to perform the claimed functions of the controller, and therefore
15 does not infringe, and in fact operates substantially similarly to the prior art that the inventor
16 distinguished during prosecution.

17 ESPI's basic response is to insist the accused products *do* infringe because they have an
18 onboard controller that performs the essential functions claimed in the patent, and that all of
19 HTC's arguments as to what may happen in the external computer in *addition to* those essential
20 functions are simply irrelevant.
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III. LEGAL STANDARD

Summary judgment is proper “if the pleadings and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(c). The purpose of summary judgment “is to isolate and dispose of factually unsupported claims or defenses.” *Celotex v. Catrett*, 477 U.S. 317, 323-24 (1986). The moving party “always bears the initial responsibility of informing the district court of the basis for its motion, and identifying those portions of the pleadings and admissions on file, together with the affidavits, if any, which it believes demonstrate the absence of a genuine issue of material fact.” *Id.* at 323 (citations and internal quotation marks omitted). If it meets this burden, the moving party is then entitled to judgment as a matter of law when the non-moving party fails to make a sufficient showing on an essential element of the case with respect to which he bears the burden of proof at trial. *Id.* at 322-23. The non-moving party “must set forth specific facts showing that there is a genuine issue for trial.” Fed. R. Civ. P. 56(e). The non-moving party cannot defeat the moving party’s properly supported motion for summary judgment simply by alleging some factual dispute between the parties.

To preclude the entry of summary judgment, the non-moving party must bring forth material facts, *i.e.*, “facts that might affect the outcome of the suit under the governing law Factual disputes that are irrelevant or unnecessary will not be counted.” *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247-48 (1986). The opposing party “must do more than simply show that there is some metaphysical doubt as to the material facts.” *Matsushita Elec. Indus. Co. v. Zenith Radio*, 475 U.S. 574, 588 (1986). The court must draw all reasonable inferences in favor of the non-moving party, including questions of credibility and of the weight to be accorded particular evidence. *Masson v. New Yorker Magazine, Inc.*, 501 U.S. 496 (1991) (citing *Anderson*, 477 U.S. at 255); *Matsushita*, 475 U.S. at 588 (1986). It is the court’s responsibility “to determine whether the ‘specific facts’ set forth by the nonmoving party, coupled with undisputed background or contextual facts, are such that a rational or reasonable jury might return a verdict in its favor based on that evidence.” *T.W. Elec. Service v. Pacific Elec. Contractors*, 809 F.2d 626, 631 (9th

1 Cir. 1987). “[S]ummary judgment will not lie if the dispute about a material fact is ‘genuine,’ that
 2 is, if the evidence is such that a reasonable jury could return a verdict for the nonmoving party.”
 3 *Anderson*, 477 U.S. at 248. However, “[w]here the record taken as a whole could not lead a
 4 rational trier of fact to find for the non-moving party, there is no ‘genuine issue for trial.’”
 5 *Matsushita*, 475 U.S. at 587.

6 Evaluating infringement in patent cases is a two-part inquiry: 1) claim construction; and 2)
 7 comparison of the properly construed claims to the accused product. *Lockheed Martin Corp. v.*
 8 *Space Sys./Loral, Inc.*, 324 F.3d 1308, 1318 (Fed. Cir. 2003). Here, claim construction is
 9 complete, and the remaining task is to compare the asserted claim to the accused headsets. “[A]
 10 determination of infringement, both literal and under the doctrine of equivalents, is a question of
 11 fact.” *Id.* Because the ultimate burden of proving infringement rests with the patentee, however, an
 12 accused infringer may show that summary judgment of non-infringement is proper either by
 13 producing evidence that would preclude a finding of infringement, or by showing that the
 14 evidence in the record fails to create a material factual dispute as to any essential element of the
 15 patentee’s case. *See Novartis Corp. v. Ben Venue Labs., Inc.*, 271 F.3d 1043, 1046 (Fed. Cir.
 16 2001).

17 18 IV. DISCUSSION

19 20 A. ESPI’s burden

21 Because ESPI has the burden at trial to establish infringement, under *Celotex*, HTC can
 22 shift the burden to ESPI on summary judgment by pointing to the *absence* of any evidence to
 23 support the claims. HTC succeeded in doing so here by pointing to ESPI’s infringement
 24 contentions and its response to the interrogatory asking for all facts in support of the contentions.
 25 That interrogatory response identified no admissible evidence.

26 HTC appropriately moved to compel further responses—with the ultimate outcome of the
 27 ruling from the magistrate judge that he could not force ESPI to produce evidence that it did not
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1 have, and therefore ESPI would be bound by its existing response, given its insistence it that it had
2 nothing more to provide. ESPI has not suggested it has obtained further evidence in support of its
3 infringement contentions since then, or that it should be permitted further discovery. Accordingly,
4 summary judgment in HTC's favor is appropriate on grounds that ESPI has failed to show there is
5 admissible evidence to support at least a triable issue of fact as to infringement.

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7 B. HTC's evidence

8 Even if ESPI's failure to make an affirmative showing were not dispositive, HTC would
9 still be entitled to judgment. In its briefing, and at oral argument, ESPI effectively conceded it had
10 produced virtually no admissible evidence as to how the accused headsets operated. Instead, ESPI
11 argues there is at least a triable issue of fact as to infringement under HTC's own evidence
12 regarding the headsets.

13 HTC presented a detailed description of how its products operate, supported by specific
14 evidentiary citations to the declaration of its retained expert, Dr. John Mellor, and technical
15 documents. In response, ESPI did not meaningfully challenge any of the facts offered by HTC nor
16 did it offer competing facts. While ESPI asserts certain statements in Mellor's declaration "do not
17 make sense," it merely quarrels with HTC's *characterizations* of the facts, or the conclusions HTC
18 draws from those facts, rather than pointing to any admissible evidence that there are triable issues
19 of fact as to how HTC's products work. Accordingly, ESPI cannot avoid entry of summary
20 judgment against it unless its infringement theories are viable even under HTC's presentation as to
21 how the headsets operate.

22 ESPI's theories, however, fail both for procedural and substantive reasons. First,
23 procedurally, the arguments ESPI presents in its opposition go well beyond those it disclosed in its
24 infringement contentions. Second, even assuming ESPI should be permitted to present previously
25 undisclosed infringement contentions, or that its current arguments are not broader than the timely
26 disclosed contentions, those arguments are not tenable.

ESPI may be correct that there is circuitry on the accused headsets that could be characterized as a “controller,” but it has not shown that controller is “**configured to identify a derivative pattern** of said first **plurality** of predetermined light sources from said photodetector data, wherein said derivative pattern is **indicative of the position of said photodetector.**” Instead, ESPI argues the “controller” in the HTC headsets correlates the time-stamped data output from individual sensors, the particular sensor that was “hit”, and the width of the pulse, thereby producing the claimed “derivative pattern.”

Timestamps for a “hit” on a given sensor are not a “pattern” of anything under the plain and ordinary meaning of the term. Rather, each timestamp is a digital representation of a single instance of a single photodetector detecting light at a given time. Neither ESPI nor its expert Dr. Mandella provides any explanation how a timestamp for a given hit on a given sensor is a “pattern,” beyond simple conclusory assertions that it is.

Furthermore, ESPI fails to address the point that nothing on the headset identifies a derivative pattern of a “plurality of predetermined light sources.” ESPI’s theory is that the hits on individual sensors from individual laser sweeps are the “pattern.” Still, any given hit (*i.e.*, the timestamps and pulse width for that hit) only represent light detected from a single laser source.

Additionally, ESPI fails to show the alleged “derivative pattern” is “indicative of the position of said photodetector.” ESPI merely asserts that timestamps are “indicative” of position because they are supposedly proportional to angles θ and ϕ , (with respect to the lighthouse) and that width is proportional to distance. ESPI, however, has not shown accused products actually find the position of a given photodetector using a combination of two angles from a lighthouse and a distance, and have offered no evidence to contradict Dr. Mellor’s explanation that they do not.

ESPI’s fundamental argument is that HTC cannot avoid infringement merely by arguing that its technology utilizes a separate off-board computer to perform *additional* calculations or functions. While that undoubtedly would be true in the abstract, it remains incumbent on ESPI to show, through admissible evidence, that there is at least a triable issue of fact as to whether the onboard circuitry in the accused headsets “identif[ies] a derivative pattern of [a] plurality of

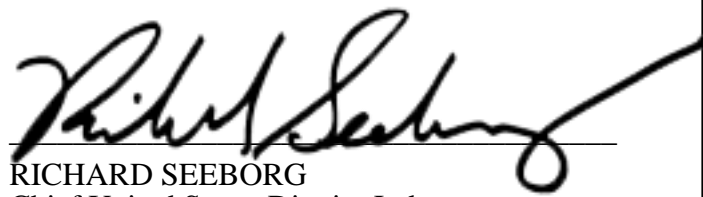
predetermined light sources . . .” where that pattern is indicative of the position of a photodetector on the headset. The evidence is that the accused headsets only accomplish that result through use of an off-board computer, and ESPI has not shown a triable issue of fact to the contrary. Accordingly, HTC is entitled to summary judgment in its favor.

V. CONCLUSION

The motion for summary judgment is granted.¹ A separate judgment will issue.

IT IS SO ORDERED.

Dated: January 14, 2022


RICHARD SEEBORG
Chief United States District Judge

¹ The associated sealing motions are also granted.